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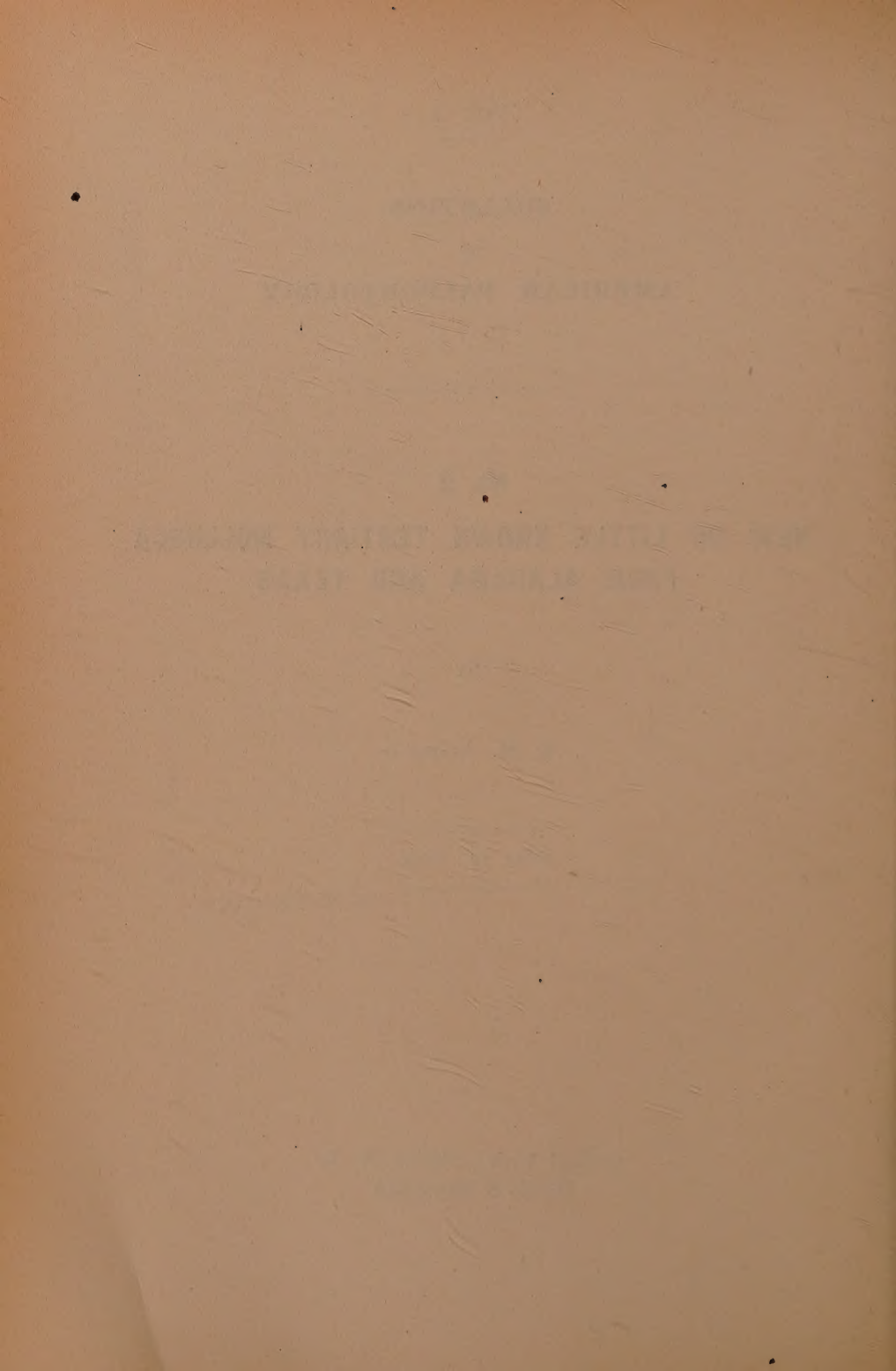
**NEW OR LITTLE KNOWN TERTIARY MOLLUSCA
FROM ALABAMA AND TEXAS**

By

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Harris & Stoneman



NEW OR LITTLE KNOWN TERTIARY MOLLUSCA FROM ALABAMA AND TEXAS.

By

T. H. Aldrich.

The fossils described in this paper were obtained by the writer between the years 1887 and 1889, and the plates and most of the descriptions were prepared for publication early in 1890. The material, however, was never published, and since then several of the forms illustrated have been described by others. A large number of the species are from the Eocene of Alabama. They do not by any means exhaust the subject as the writer still has a large number of new species from the prolific strata of Alabama and adjoining states.

Through the kindness of Professor Gilbert D. Harris of Cornell University the writer is now enabled to publish the following descriptions.

All the types of the species herein described are in my collection unless otherwise stated.

SCAPHOPODA.

DENTALIUM.

Dentalium multannulatum, nov. sp.

Pl. I, fig. 3.

Shell strongly arcuate, transversely striated or ringed, posterior end entire; anterior, oblique; section oval; substance of shell thin at the anterior end, thickened posteriorly.

Locality.—Gregg's Landing, Ala.

This species is beautifully marked with close-set annulations which seem to be slightly oblique to the axis. All the specimens found, over a dozen in number, are silicified, some showing the rings strongly, others rather faintly. The posterior orifice is almost circular in section.

Dentalium microstria Heilprin.

Pl. I, fig. 6.

This figure is given to show the form of the slit. Perfect specimens are extremely rare.

Locality.—Wood's Bluff, Ala.

CADULUS.

Since this paper was practically finished in 1889, Prof. W. H. Dall in his monumental "Contributions to the Tertiary Fauna of Florida" has given a complete review of this genus rendering the illustrations of this genus of little value. *Cadulus subcoarctatus* Gabb no doubt should be united to *C. abruptus* Ald. & M'r. A form from Gregg's Landing, Ala., differs from the type by being much more slender. It is figured on Plate 1, figures 1 and 2. The sulci are two in number. Plate 1, figure 4 represents a form with five sulci and notches to correspond; it is from Wood's Bluff Alabama. There are other differences, but our knowledge of the limits of variation is not sufficient to warrant the erection of these forms into distinct species at present. *Cadulus juvenis* Meyer is common in Texas from Mosley's Ferry, Burleson Co., and in Lee County. It is tumid, with posterior end nearly circular; anterior strongly oval, and flattened on one side; the cingulum is over one third from the anterior.

Singular to relate, no specimens of *Cadulus subcoarctatus* Gabb, have been found at Wheelock or elsewhere in Texas by several collectors sent out by the writer while other species are rather common. *Cadulus compressus* M'r is evidently intended for *C. depressus* M'r from a perusal of Dr. Meyer's article.*

The Eocene species now known are, viz.:—

1. *Cadulus turritus* Lea, sp.
Dentalium turritum Lea, Cont. to Geol., 1833.
2. *Cadulus depressus* M'r, Proc. Phila. Ac., 1884, p. 111.
C. compressus Meyer.
3. *Cadulus subcoarctatus* Gabb.
Ditrupea subcoarctata Gabb, misprint.
Ditrupea subcoarctata Gabb, Jour. Phila. Acad., vol. 4, 2nd ser., p. 386, pl. 67, fig. 47, 1860.
Gadus subcoarctatus Gabb, Conrad's List, 1866, p. 10.
Cadulus subcoarctatus Gabb, Dall, Trans. Wag. Free Inst. Sci., vol. 3, pt. 2, p. 444, Dec., 1892.
Cadulus abruptus M'r & Ald., Jour. Cin. Soc. Nat. Hist., p. 40, pl. 2, fig. 2, July, 1886.
4. *Cadulus newtonensis* M'r & Ald., Jr. Cin. Soc. Nat. Hist., July, 1886.
C. jacksonensis M'r, Amer. Jr. Sci., p. 462, 1885; Contributions, p. 65, pl. 3, fig's 8, 8a, 8b.

*Am. Jr. Sci., vol. 30, July, 1885.

5. *Cadulus quadriturritus* M'r, Contr., p. 65, pl. 3, fig's. 7, 7a, 1886.
6. *Cadulus corpulentus* M'r, Contr., p. 66, pl. 3, fig. 5, 1886.
7. *Cadulus turgidus* M'r, Contr., p. 65, pl. 1, fig. 10, 1886.
8. *Cadulus vicksburgensis* M'r, Amer. Jr Sci., 1885, and Contr., p. 65, pl. 3, fig. 6, 1886.

PTEROPODA.

SPIRIALIS.

Spirialis elongatoidea Ald. Pl. 2, fig. 9.

Physa elongatoidea Ald., Jr. Cin. Soc. N. H., July, 1887, p. 83.

This form and the next were described as *Physæ*, but a more careful examination proves them to be Pteropods.

Spirialis choctavensis Ald.

Physa choctavensis Ald., Jr. Cin. Soc. N. H., p. 83, 1887.

See remark upon previous species.

Creseis sp. Pl. 1, fig. 5.

This form was received from Wheelock, Texas. It is more slender than typical *Styliola simplex* M'r, but is probably that species.

GASTROPODA.

VOLVARIA.

Volvaria bulloides Lam. Pl. 2, fig. 13.

This species has heretofore been given the manuscript name of *M. (Volvaria) gabbiana* by me, and Mr. Harris has lately published it under the same specific name. A careful examination of specimens from Grignon, France proves the species to be the same.

RINGICULA.

Ringicula butleriana, nov, sp. Pl. 1, fig. 8.

Shell robust, ovate; whorls five, rounded, transversely or spirally ribbed; columella with strong callus and three folds. The outer lip thickened, smooth within; aperture large; length of the same, four-fifths of the body whorl.

Locality.—Butler, Ala.

Horizon.—Wood's Bluff beds.

Differs from *P. biplicata* Lea sp. (Pl. 1 fig. 9) by the absence of any crenulations upon the inner margin of the outer lip, and

in being regularly striated. It differs from *R. mississippiensis* Con. by the regular striations, absence of a smooth band on the superior part of the whorls and in its very long aperture.

SCAPHANDER.

Scaphander primus Ald.

Pl. 2, fig's. 1, 1a.

The specimen illustrated was obtained at Jackson, Miss. and is much larger and finer than the type.

Scaphander alabamensis, nov. sp.

Pl. 2, fig. 2.

Shell thin, small, rather broad posteriorly; aperture and outer lip slightly produced behind the apex; spiral sculpture fine, lines very numerous at posterior and anterior, no pitting to lines observed; growth lines only perceptible under a glass; posterior apex with a pit; margin rising to outer lip; a very slight callus on body whorl, thicker on concave part curving over the shell.

Locality.—Gregg's Landing, Ala.

The species seems to be rare. It resembles the recent *S. watsoni* Dall, but is much broader posteriorly and the outer lip is not extended much beyond the apex.

ATYS.

Alys robustoides, nov. sp.

Pl. 2, fig's 4, 4a.

Shell small, oval, subgibbous, striated, umbilicated; lines of growth numerous, more so on the posterior half of the shell; spirals numerous, more closely set at extremities and rather deeply cut, no pitting of the lines perceptible; posterior end rising above apex and partly covering the posterior pit; the callus twisting into a saddle shape to join the outer lip; spirals closely set where they run up into the umbilicus; pillar lip nearly straight.

Locality.—Gregg's Landing, Ala.

CYLICHNA.

Cyllichna meyeri, nov. sp.

Pl. 2, fig. 5.

Shell cylindrical, narrow, thin, lines of growth prominent and closely set on the posterior, becoming obsolete on the middle part of the shell; spiral lines numerous, closely set, impressed slightly and showing very faintly through the lines of growth at the posterior end; a deep excavation running from aperture at posterior over the apex and connecting to outer lip which projects above the opening, a strong rounded ridge marking the connection with the edge of whorl; aperture narrow at posterior, widening at anterior, the callus thickening but without a fold, umbilicus rudi-

mentary.

Locality.—Matthews' Landing, Ala.

Differs from *C. dekayi* Lea by its groove at posterior, the sudden thickening of lines of growth and the absence of a fold. Named in honor of Dr. Otto Meyer.

BULLINA.

Bullina leai, nov. sp.

Pl. 2, fig. 6.

Shell cylindrical, whorls five, spire depressed; suture deeply impressed; shell rounded, marked by a series of raised longitudinal lines at base that correspond to lines of growth; body whorl shouldered and bordered on upper part with a large number of very fine spiral lines which are crossed by lines of growth, the whole forming a band, shell slightly constricted just below this band; main part of body whorl nearly smooth, at the base the spiral lines again appear; columella with one fold; outer lip recurved, smooth and rounded; aperture narrow, widest at base.

Locality.—Bell's Landing, Ala.

This pretty species is distinguished by its band and constriction from the form described by Lea as found at Deal, N. J., under the name of *Acteon wetherilli*. A young specimen, probably the same species, is in my collection from the Claiborne sand bed. It shows the apex strongly papillated.

UMBRACULUM.

Umbaculum, sp.

Pl. i, fig's 14, a.

Shell minute, surface marked with lines of growth only; apex blunt; base narrowly oval; muscular scar distinct.

Locality.—Lisbon, Ala.

This form may be the very young shell of the *U. planulatum* Conrad, but is interesting as showing the very young shell.

PLEUROTOMA.

Pleurotoma servatoidea, nov. sp.

Pl. 4, fig. 5.

Shell narrow; whorls twelve, the first four smooth, the next with transverse ribs, the balance with six to seven very prominent rounded ribs crossed by close set raised spiral lines, the lines alternating in size; whorls compressed at suture; mouth narrow, smooth within; canal long, nearly straight; anal fasciole narrow and situated at the broad part of body whorl; lines of growth not prominent.

Locality.—Gregg's Landing, Ala.

This species resembles superficially *Pleurotoma servata* Con. from the Vicksburg beds.

Pleurotoma silicata, nov. sp.

Pl. 3, fig. 3.

Shell fusiform; whorls rounded, nine to ten, the first three embryonic ones smooth, the next four plicate, a few spirals on the upper part of these whorls just below the suture; spiral lines nearly obsolete on the last three whorls; whorls rounded, upper part of the body whorl constricted and all the whorls showing this feature in a diminishing degree. The body whorl has numerous fine spiral lines becoming more numerous and distinct towards the base. Aperture linear, expanding slightly below; outer lip acute, excisum large.

Locality.—Gregg's Landing, Ala.

The surface of the shell looks smooth and shining to the eye and the shell very strongly fusiform.

Pleurotoma langdoni, nov. sp.

Pl. 3, fig. 5.

This species has been identified with the European *P. acuminata* Sow. by Prof. Heilprin. I give it the above name provisionally as the foreign forms seem to me to be distinct. The shell has about thirteen whorls, the first four smooth, the balance with a raised beaded band at the suture followed by the fasciolar space showing lines of growth; periphery of the whorls carrying tubercles rising obliquely from the lower half of the same and strongest at termination; spiral lines numerous, close set, somewhat beaded on the body whorl.

Locality.—Hatchetigbee Bluff; also at Wood's Bluff, Ala.

BORSONIA.

Borsonia (*Scobinella*) *conradiana*, nov. sp.

Pl. 1, fig. 13.

Shell small, rather solid, spirally ribbed, ribs beaded; whorls seven to eight; aperture narrow; outer lip crenulated within; pillar lip with four strong plaits, the last one oblique to the other three.

Locality.—Wheelock, Texas.

This species has the same ornamentation as the young of *S. cœlata* Con. but the plaits on the pillar lip are different. Gabb's type of *S. crassiplicata* is a very young shell and seems to equal *S. cœlata* Con.

Borsonia plenta Har. & Ald.

Pl. 1, fig. 12.

Mr. Gilbert D. Harris has just published this species under our

joint name, so I omit any description. Very large specimens are in my cabinet 44 mm. in length and 14 mm. in width.

Borsonia sp. (young)

Pl. I, fig. 18.

Locality.—Claiborne, Ala.

Too young for identification or description.

Prof. W. M. Gabb in his article* on the Texas Eocene fossils from Wheelock and vicinity describes a new genus, *Eucheilodon*, and makes the typical species *E. reticulata*. This name it seems advisable to retain as subgeneric, and it may be placed under *Borsonia*.

E. crenocarinata Heilprin from the Jackson beds does not differ specifically from *T. reticulata*. The type of Gabb's species of *Scobinella læviplicata* is also the same; Gabb was misled by the poor condition of his type.

Scobinella Con. might be retained as a subgenus of *Borsonia* for those forms showing more than two plaits on the columella and having a sculpture of coarse spiral lines beaded; *Cordiera* Rouault, for those forms showing two plaits on the columella and having an ornamentation like *C. biconica* Whitfield.

GLYPHOSTOMA.

Glyphostoma harrisi, nov. sp.

Pl. I, fig. 11

Shell small, whorls nine, spire acuminate, suture deeply impressed; the first four whorls smooth, the next two with longitudinal beads, balance with strongly raised spirals; suture bounded by a cord above and below, followed by a broad excavated space corresponding to the fasciolar space; lines on the last half of the body whorl with an intercalary thread; aperture narrow, outer lip slightly incurved, striate within; pillar lip thickened and bearing two (in the type) to six small plaits; umbilicus rudimentary.

Locality.—Wheelock, Texas, also in Lee and Burleson Co's.

The figure is a little too broad.

This species is placed by Mr. Harris under *P. infans* Meyer, but it seems to me to be a very different species as the latter has no plaits on the columella, is narrower, has fewer whorls and a twisted canal.

*Descriptions of new species of American Tertiary and Cretaceous fossils.—*Jr. Ac. Nat. Sci.*, vol. 4, 2d ed., p. 379, 1860.

PYRAMIMITRA.

Pyramimitra costata Lea.

Pl. 2, fig. 11.

This form occurs at Jackson, Miss., Clark Co., Ala., and in Texas.

TEREBRIFUSUS.

Terebrifusus amœnus Con.

Pl. 1, fig. 15.

This species seems to vary considerably and includes *T. multiplicata* H. C. Lea, *T. gracilis* Lea and *Mitra elegans* H. C. Lea.

The specimen figured is from Wood's Bluff, Ala.

FULGUR.

Fulgur eocene nov. sp.

Pl. 3, fig's 7, 7c.

Shell oblong fusiform ; spire obtuse ; whorls seven, angulated ; whorls of the spire four in number and smooth, the others covered with fine revolving striæ ; periphery of the last three whorls bounded by longitudinal tubercles, sometimes a double line of these appearing upon the upper whorls ; body whorl with three strong carinæ, the one on the shoulder strongly tuberculose ; one varix showing in all the specimens ; suture impressed, linear ; outer lip internally denticulated and thickened ; inner lip bearing a fold near base of aperture ; canal long, nearly straight, slightly tortuous, bent upwards, finely striated to the extremity.

Localities.—Matthews' and Gregg's Landings. Ala.

LEVIFUSUS.

Levifusus trabeatus Con., var.

Pl. 4, fig. 6.

This shell only differs from the type by being more spinose on the peripheral carinæ of the whorls and with the spiral lines more prominent. The species ranges through the Eocene up to and including the Jackson beds.

Levifusus branneri and *L. trabeatoides* Harris are probably varieties of this protean species. At Tuscaloosa Landing, Ala., there is a form which has a straight canal, with the outer lip thickened and strongly dentate within, also with both peripheral lines tuberculate. At Hatchetigbee Bluff, Ala., the Texas form occurs.

Locality.—Figured specimen, Matthews' Landing, Ala.

*LEVIFUSUS.**Levifusus suteri*, nov. sp.

Pl. 3, fig. 4.

Shell oblong-ovate, whorls seven, the first three smooth, next nodular and angulated. The periphery of each whorl marked by a double spiral line or band carrying nodes, where crossed by longitudinal plications; upper part of whorls looking down on same shows a spiral line inside of the peripheral border following the sinuosities of the same; periphery of body whorl spinous and beaded, followed by a broad concave space below, then a second spiral ring, followed by a third space and ring; spiral lines cover the canal; the third spiral ring extending within the aperture; outer lip smooth, aperture quadrate above with a narrowing canal below; columella smooth, curved; canal slightly twisted, umbilicus rudimentary.

Locality.—Matthews' Landing, Ala.

Resembles *L. trabeatus* Con. vars, but has a fusoid canal. Named in honor of my young friend, Henry Suter, Esq., of New Zealand.

*LATIRUS.**Latirus alabamensis*, nov. sp.

Pl. 1, fig. 17.

Shell small, solid; whorls six, apex smooth; whorls spirally striated, suture strongly impressed; labrum striate, denticulate within, striations extending within the aperture, three nodular elevations at narrow part of pillar lip; canal recurved, short.

Locality.—Hatchetigbee Bluff, Ala.

This species is doubtfully placed in *Latirus*. It has no umbilicus.

*FUSUS.**Fusus? whitfieldi*, nov. sp.

Pl. 4, fig. 4.

Shell thin, broadly fusiform, whorls ten, first four smooth, the next partly smooth and partly transversely ribbed, the balance angulated with ribs on the lower half of whorl; surface reticulated; the spiral lines alternate in size, very closely set, the smaller spiral line beaded on the body whorl; constricted at suture; outer lip sigmoid, smooth within; canal slightly bent.

Locality.—Matthews' Landing and Gregg's Landing, Ala.

This shell partakes so much of a Pleurotomid, I hesitate to put it under *Fusus*.

FUSUS.

Fusus harrisi, nov. sp.

Pl. 4, fig's 2 & 8.

Shell stout, broadly fusoid, whorls eight to nine, the first three smooth, the apical one slightly immersed, generally missing, balance transversely ribbed; ribs rounded, about eight on each whorl; spiral lines very close-set and stronger at centre of whorls; outer lip strongly sigmoid as also the lines of growth; the shell has a cancellated appearance under a glass; columella twisted, canal turned upwards at base.

Locality.—Gregg's Landing, Ala.

Fusus? mohri, nov. sp.

Pl. 3, fig. 6.

Shell broadly ovate, apex pointed; whorls ten, the first five very small, smooth, the sixth partially so passing into the adult stage; adult whorls with six strongly developed transverse ribs which are angular at the periphery; spiral sculpture coarse, more so at the junction with the ribs, making each one to terminate in a rounded and beaded projection broader at the point than elsewhere; columella straight, slightly thickened at the lower half of the aperture; canal straight.

Locality.—Matthews' Landing, Ala.

Named in honor of Dr. Chas. Mohr, of Mobile, Ala.

Fusus siphus, nov. sp.

Pl. 3, fig. 2.

Shell fusoid, whorls eight, the first three smooth, the others strongly striated, costate; the lines of growth prominent, crossed by fine spirals; suture impressed, banded by a raised ridge, which is followed by a compressed space; whorls shouldered by the ridge, body whorl longer than balance of shell, shouldered, the longitudinal lines bent at shoulder so that they are sigmoid and give the shell somewhat the appearance of a *Pleurotoma*; aperture rather narrow, callus thin, the lines ending abruptly in most cases at the same; outer lip smooth, canal slightly twisted.

Locality.—Gregg's Landing, Ala.

STREPSIDURA.

Strepsidura heilprini, nov. sp.

Pl. 4, fig. 1.

Shell short, stout; whorls nine, first four smooth, embryonic, the fifth costate, the others with about six profoundly raised and rounded transverse ribs; surface reticulated, apex pointed; outer lip striated within; columella twisted, bearing at the narrow part far within a single fold; canal extremely twisted and turned upward at base.

Locality.—Matthews' Landing, Ala.

This beautiful species has a general resemblance to *Fusus sub-scalarinus* Heilpr. The figure does not show the reticulated surface well nor the extreme torsion of the canal. The drawing was made from a half-grown specimen ; named in honor of Prof. A. Heilprin, of Philadelphia, Pa.

Strepsidura ficus Gabb sp.

Pl. 3, fig. 1, 1a.

Whitneya ficus Gabb.

Geol. Cal., Paleont., vol. 1, p. 104,

pl. 28, fig. 212, 1864.

It is due to Mr. G. D. Harris that the above species is identified with the California form. The writer had renamed it and this name is now fortunately suppressed.

SIPHO.

Sipho erecta, nov. sp.

Pl. 4, fig. 7.

Shell small, whorls nine, the first four smooth ; apex pointed ; shell cingulate ; lines of growth showing between the revolving ribs ; suture impressed ; whorls slightly shouldered ; aperture narrow ; outer lip thin, smooth within ; columella thickened ; canal somewhat recurved.

Locality.—Wood's Bluff, Ala.

PISANIA.

Pisania (Tritonidea) johnsoni, nov. sp.

Pl. 4, fig. 9.

Shell small, solid, two or three embryonic whorls, five subsequent ; three to four broad spiral ribs on the whorls above and about thirteen on the body whorl, also fine spirals between ; canal short, recurved ; outer lip dentate internally, with a single heavy callosity or rib opposite the anterior part of the aperture ; inner lip granulose above ; suture impressed.

Locality.—Bell's Landing, Ala.

COLUMBELLA.

Columbella mississippiensis M'r & Ald.

Pl. 1, fig. 19, 19a.

This form differs from the typical only by the plaits on the columella being nearly obsolete.

Locality.—Wood's Bluff, Ala.

MUREX.

Murex elegantissimus, nov. sp.

Pl. 4, fig. 3.

Shell rather solid ; whorls eight, first three embryonic with about ten nodose, rounded ribs slightly pointed at periphery of some ex-

amples, others rounded, covered with close-set spiral lines except above the shoulder where there is a smooth space to suture; outer lip thick, with a few denticulations within; canal open and twisted; no umbilicus.

Locality.—Gregg's Landing, Ala.

This figure was made from a young shell. Much larger specimens are now before me. It is possible this may be the unfigured *M. septemnarius* Con., but it differs from the description.

Murex (Pteronotus) grandispinosa.

“ “ *burnsi* Ald., The Nautilus, vol. 7, No. 9, p. 98, pl. 4, fig's 4, 4a, 1894.

Prof. W. H. Dall* has changed *M. shilohensis* Heilp. var. *burnsi* Whitf. into a distinct species and this necessitates a change of name in ours.

PYRULA.

Pyrula (Fusoficula) texana Har., Proc. Ac. Nat. Sci. Phila., 1885, p. 77, pl. 8, fig. 11.

Odontopolys texana Ald., MS.

Volutilithes? rectus Ald., MS.

Pl. 2, fig's 12, 12a.

This species is a peculiar form rather difficult to place generically and I am not yet satisfied with the position assigned by Mr. Harris. Occurs at Newton, Miss., Lisbon, Ala., and Texas.

GONIOBASIS.

Goniobasis texana Heilprin.

Pl. 2, fig. 3.

This form was described by Prof. Heilprin as a *Cerithium* but more perfect specimens than he had prove it to be a gigantic *Goniobasis*. Two specimens are in my collection from Texas; the largest if perfect would be over four inches in length. There is but little difference between this form and *G. trigemmata* Conrad sp., Alabama, and I have no doubt they will be eventually united.

The figure was drawn from a very young shell.

Locality.—Wheelock and Lee Co., Tex.

RISSOINA.

Rissoina alabamensis, nov. sp.

Pl. 2 fig. 8.

Shell solid; whorls nine, the first four smooth, embryonic, then follow four rounded adult whorls showing fine spiral lines which are slightly pitted at the intersections of lines of growth with

*Trans. Wag. Fr. Inst., vol. 3, p. 141, 1890.

them ; body whorl rounded, convex, contracted below centre to form the base on which the lines of growth are more strongly marked ; aperture oblong-ovate outer lip channelled anteriorly, thickened and expanded posteriorly and strongly sigmoid.

Locality.—Matthews' Landing, Ala.

The figured type shows a strong varix on the body whorl which is not generally present. Whorls vary from seven to nine. Rather common.

TUBA.

Tuba (Mathilda) claibornensis Aldr.

Pl. 1, fig. 7.

J. Cin. Soc. N. H., July, 1887.

A figure is here given of this species. It is quite a rare shell. It seems as if *Mathilda* should be retained as a subgenus of *Tuba*. A careful examination of Lea's species of *Tuba*, show that *T. sulcata* is a broken specimen of *Ranella macduri* Con. plus *Pisania clai-bornensis* Whitf. plus *Triton pyramidatum* H. C. Lea and is a *Triton*.

CERITHIODERMA.

Cerithioderma (Mesostoma) prima Con.

Pl. 1, fig. 10.

Mesostoma lisbonensis Aldr. (MS.)

Differs from the typical form in being much coarser, with smaller aperture, more robust and short. I am satisfied that Dall is correct (Tr. Wagner Inst. p. 293, 1892) in uniting this form to Conrad's shell and that *C. rugosa* Heilprin is a synonym.

Locality.—Lisbon, Ala.

MELANOPSIS.

Melanopsis planoidea, nov. sp.

Pl. 2, fig. 7.

Shell ovoid, spire high ; whorls smooth ; over five in number ; body whorl large ; suture distinct, apex eroded ; aperture ovate, angular at posterior, outer lip thin, extending below the terminus of the columella ; inner lip bent and slightly twisted at the extremity ; callus thin, moderate, thickened posteriorly.

Locality.—Gregg's Landing, Ala.

This species resembles *M. anita* Aldr. described from the same locality, but differs in shape ; the body whorl is not so large or so long and the spire more regular ; apex is missing ; outside of the slightly excised canaliculate aperture it more nearly resembles the genus *Goniobasis*.

SIGARETUS.

Sigaretus (*Sigaticus*) *clarkianus* Aldr.

Pl. 1, fig. 16.

Hitherto unfigured; it is described in Jour. Cin. Soc. Nat. Hist.
p. 83, July, 1887.

Locality.—Choctaw Corner, Ala.*Horizon*.—Woods' Bluff section.

PELECYPODA.

OSTREA.

Ostrea cretacea Morton.

Pl. 5, fig 10.

Locality.—Hatchetigbee Bluff and "the Rocks," Clark Co.,
Ala., in white limestone.

PECTEN.

Pecten chodavensis, nov. sp.

Pl. 5, fig. 7.

Shell suborbicular thin, depressed, finely, closely ribbed, ribs showing through the substance of the shell, imbricated near ventral margin and on the anterior slope, smaller ribs showing between on the anterior slope; ears ribbed and ribs imbricated with fine, oblique reticulations between.

Locality.—Choctaw Corner and Wood's Bluff, Ala.*Pecten clarkianus*, nov. sp.

Pl. 5, fig. 11.

Shell orbicular compressed; ears nearly equal; beaks pointed; both valves about equi l. the right one convex, the umbones more slightly convex, the apex of valves smoother very minutely striated the lower and older part strongly marked with about 48 radiating ribs, strongest on the right valve, anterior ear on right valve with a sinus, ears striated.

Locality.—Sowilpa Cr., Ala.*Geological horizon*. Lisbon beds.

This species combines the characters of two subgenera. The ribs in some specimens are quite plain near the beaks, then become obsolete and suddenly reappear below, where they often bifurcate. Examined under a glass, the ribs appear to be smooth and rounded; on the left valve the beaks are ribbed, but on the right they appear to be smooth. Young specimens are difficult to distinguish from *P. scintillatus* Conrad.

MODIOLA.

Modiola alabamensis, nov. sp.

Pl. 5, fig. 13.

Shell strongly arcuate, surface with raised lines closely set be-

coming nearly obsolete on the beaks; a few lines of growth crossing the striae; beak small, hinge margin slightly curved, ascending; very small fissure on basal margin.

Locality.—Choctaw Corner, Ala.

Geological horizon.—Wood's Bluff section.

LITHODOMUS.

Lithodomus claibornensis Con.

Pl. 5, fig. 14.

Locality.—Claiborne, Ala.

LEDA.

Leda robusta, nov. sp.

Pl. 5, fig. 1, 1a.

Shell robust, inequilateral; surface covered with rather coarse folds most prominent on the umbo; anterior elliptically rounded with an obtuse carination; posterior pointed, abruptly narrowing; upper posterior margin strongly carinated with a deep furrow running from beak to margin; the folds continue across both furrow and escutcheon; teeth arched, most prominent on posterior; cavity of the shell deep; interior polished; fosset set well under the beaks which incline towards the posterior.

Locality.—Lower bed, Wood's Bluff, Ala.

Distinguished from all others by its rotund shape, giving it almost the appearance of a *Corbula*; rather common.

Leda elongatoidea, nov. sp.

Pl. 5, fig. 2.

Shell inequilateral; flattened; surface with fine concentric folds, rugose on the upper posterior margin, which is bordered by two carinated lines; anterior elliptically rounded, folds more distinct at the margin near the beaks; teeth inequilateral, closely set, numerous, their apices pointing towards beak; posterior carination showing through the shell; fosset deep; margin entire.

Locality.—Butler, Ala.

Geological horizon.—Wood's Bluff section.

Approaches closely to *L. protexta* Con., but it is much more inequilateral. Larger specimens are grooved on the posterior margin and have the aspect of a *Yoldia*. The drawing is made from a half grown specimen, and is not very characteristic.

Leda lisbonensis, nov. sp.

Pl. 5, fig. 4

Shell oblong, lanceolate; very inequilateral, the posterior part being nearly twice as long as the anterior; compressed; beak very small, smooth; escutcheon striated, depressed, bordered outwardly by a serrated rib; posterior slope with two ribs, forming

a flattening space; the postertor surface of the shell covered with rounded, close-set, transverse folds, which terminate centrally; anterior half smooth, with a depressed space running obliquely from the beak to the ventral margin; lines of growth faint, perceptible upon anterior; anterior margin rounded, convex, while the posterior is raised; teeth numerous, very closely set and pointed; fosset small, with rounded cavity.

Locality.—Lisbon, Ala.

Geological horizon.—Lower Claiborne.

This remarkable species grows nearly three inches long, and is very distinct from any other tertiary form except *Leda magna* Lea, sp. It differs from that species, of which fragments are in my cabinet, by a remarkable lanceolate shape, and length of posterior.

Leda semenoides, nov. sp.

Pl. 5, fig. 5.

Shell small, thin, deeply folded; margin entire. Shell very similar to *L. semen* Lea, sp., but does not have the rostrum of that species; the teeth are smaller also.

Locality.—Lisbon, Ala.

YOLDIA.

Yoldia corpulentoides, nov. sp.

Pl. 5, fig. 9, 9a.

Shell oblong, nearly equilateral, swollen centrally, anterior rounded, not gaping; posterior attenuated closed on the ventral part, suddenly gaping and leaving an oral opening between the valves near the extremity; beaks compressed a ridge running from them to posterior; shell finely, concentrically striated; teeth numerous, equal on each side; fosset set well under, small but deep, pallial sinus moderate; a strong intestinal impression in the anterior part, anterior muscular scar well defined.

Locality.—Tuscahoma Landing, Ala.

Geological horizon.—Bell's Landing section.

Found in place incased in blue clay.

TELLINA.

Tellina subtriangularis, nov. sp.

Pl. 5, fig. 8, 8a.

Shell subtriangular, rather compressed, surface with close-set regular concentric lines; anterior side longest, elliptically rounded, posterior subtriangular; beak smooth, cardinal teeth two; subtriangular posterior one almost bifid, laterals strong; pallial line plainly marked, anterior muscular impression the strongest.

Locality.—Hatchetigbee Bluff, Ala.

Only the right valve known, resembles the recent *Tellina punicea* Born in outline.

PERIPLOMA.

Periploma butleriana, nov. sp.

Pl. 5, fig. 3.

Shell thin, fragile, ovate, inequilateral, very slightly gaping, with a large tooth curved toward the posterior, an internal rib running from base of tooth to posterior margin, a groove on the anterior side of the tooth, and a slight internal folding on the anterior of the shell.

Localities.—Butler, Ala.; Baker's Bluff, Ala.

Geological horizon.—Wood's Bluff section.

Only two specimens found. The tooth is not strongly spoon shaped, but rounded, and curves both upwards and to one side.

CORBULA.

Corbula concha, nov. sp.

Pl. 5, fig. 6.

Shell oblong, ovate, inequilateral; surface striate; posterior somewhat produced and rounded, and the larger; anterior elliptically rounded; tooth large and oblong; cicatrices very slightly impressed; cavity of shell rather deep.

Locality.—Bell's Landing, Ala.

Geological horizon.—Bell's Landing section of the Lignitic.

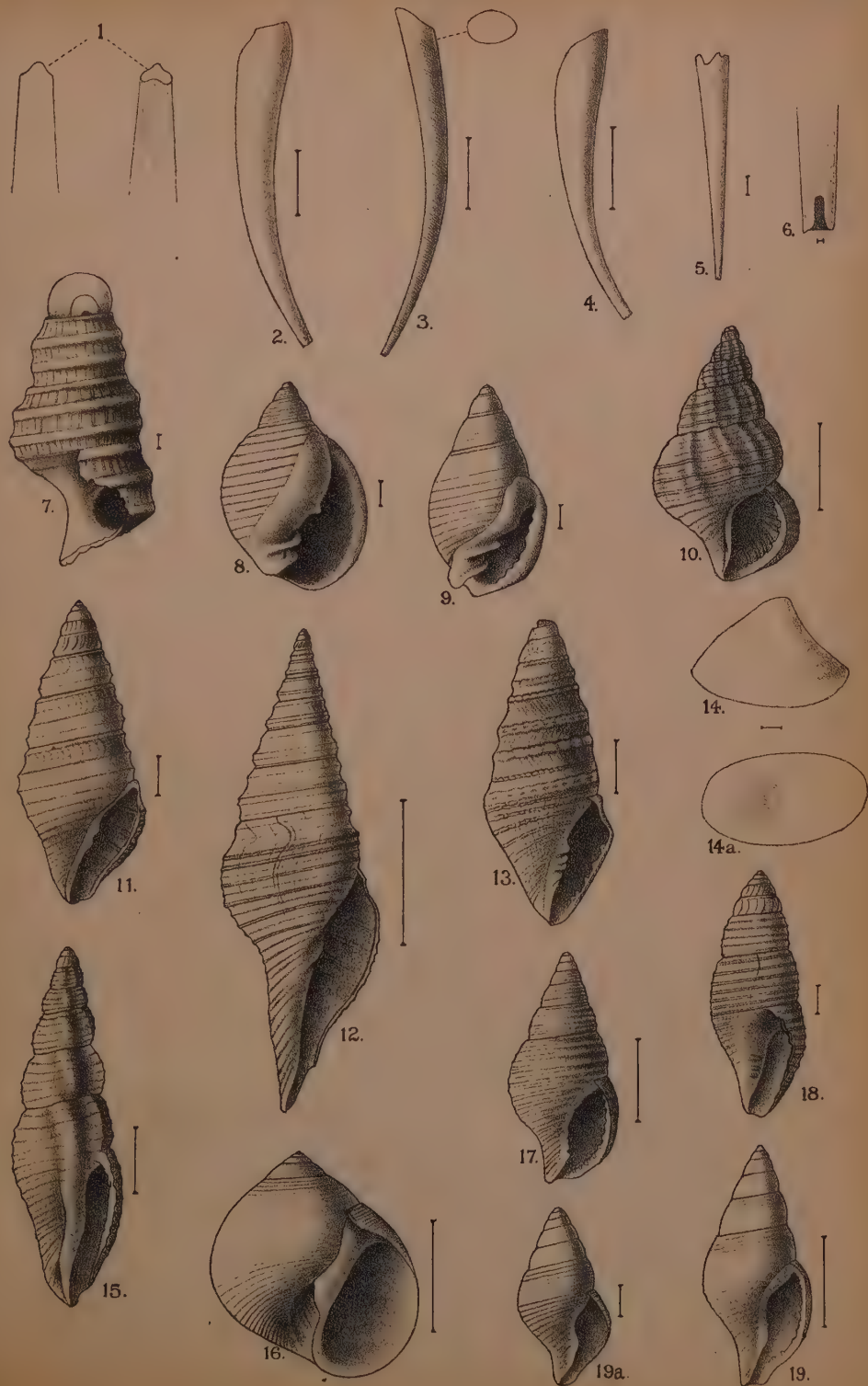
A large species of this genus. It differs from any other by its smooth surface, large posterior end, and faint muscular impressions.

GASTROCHÆNA.

Gastrochæna larva, Con.

Pl. 5, fig. 12.

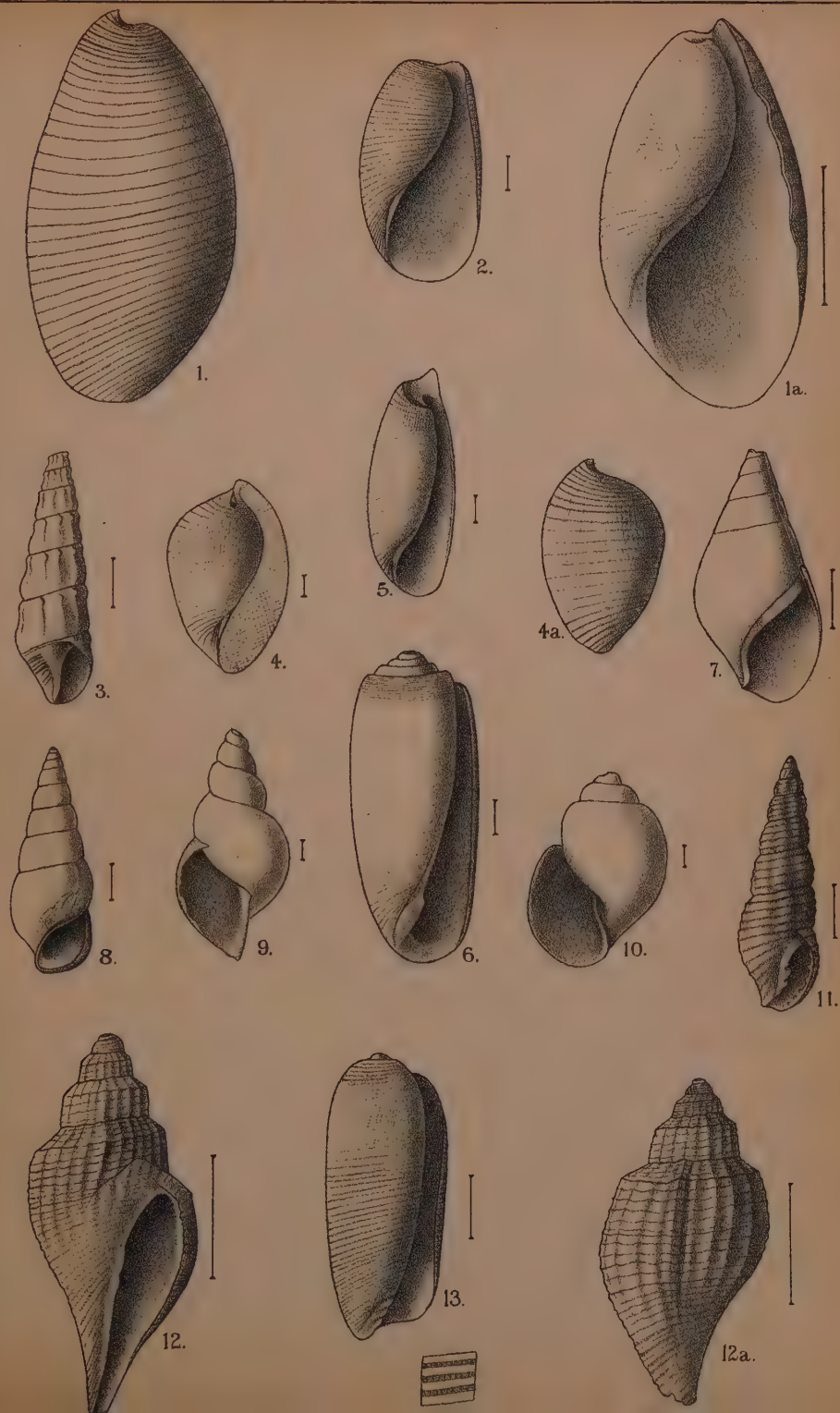
Locality.—Claiborne sand bed, Claiborne, Ala.



EXPLANATION OF PLATE 2

(3)

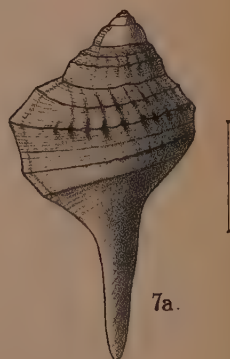
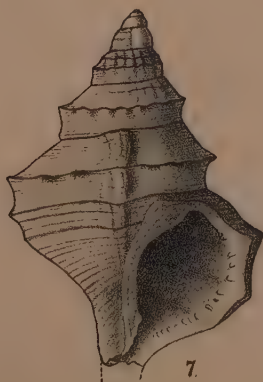
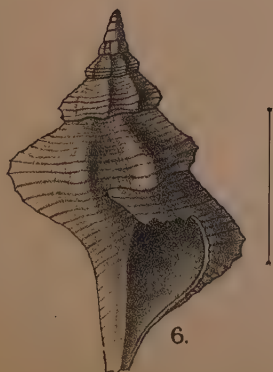
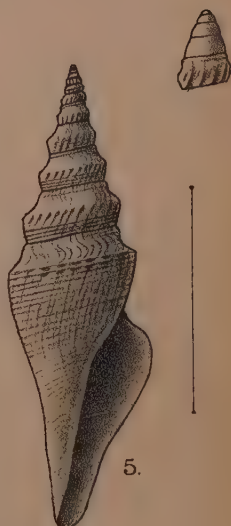
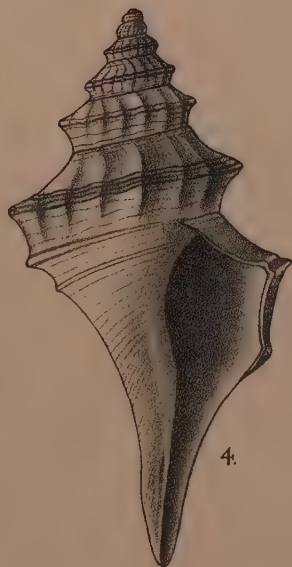
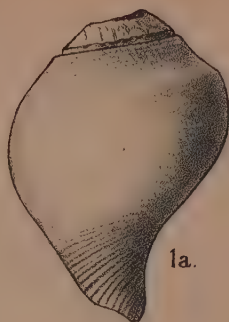
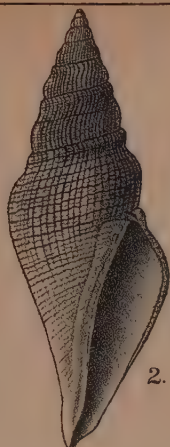
- Fig. 1. *Scaphander primus* Ald., Page 6, 58.
 1a. " " " "
 2. *Scaphander alabamensis*, 6, 58.
 3. *Goniobasis texana* Heilp. 17, 69.
 4. *Atys robustoides*, 6, 58.
 4a. " " " "
 5. *Cylichna meyeri*, 6, 58.
 6. *Bullina leai*, 7, 59.
 7. *Melanopsis planoidea*, 15, 67.
 8. *Rissoina alabamensis*, 14, 66.
 9. *Spirialis elongatoidea*, , 5, 57.
 10. *Spirialis choctavensis*, 5, 57.
 11. *Pyramimitra costata*, 10, 62.
 12. *Pyrula (Fusoficula) texana* Harris, 14, 66.
 12a. " " " " " "
 13. *Volvaria bulloides* Lam., 5, 57.



EXPLANATION OF PLATE 3.

(4)

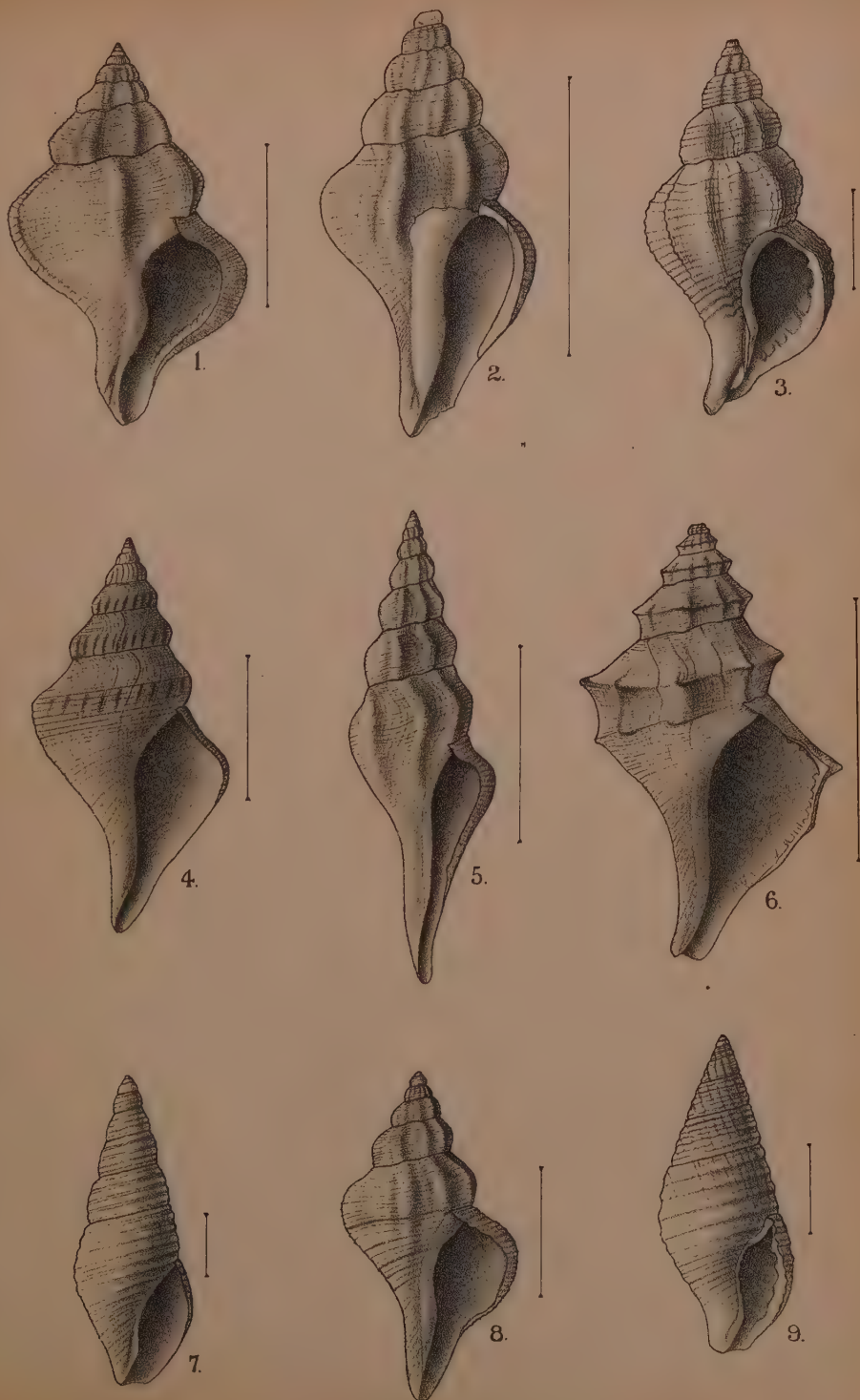
- Fig. 1, 1 a. *Strepsidura ficus* Gabb sp., Page 13, 65.
2. *Fusus siphus*, 12, 64.
3. *Pleurotoma silicata*, 8, 60.
4. *Levifusus suteri*, 11, 63.
5. *Pleurotoma langdoni*, 8, 60.
6. *Fusus mohri*, 12, 64.
7, 7 a. *Fulgur eocense*, 10, 62.



EXPLANATION OF PLATE 4

(5)

- Fig. 1. *Strepsidura heilprini*, 12, 64.
 2. *Fusus harrisi*, 12, 64.
 3. *Murex elegantissimus*, 13, 65.
 4. *Fusus whitfieldi*, 11, 63.
 5. *Pleurotoma servatoidea*, 7, 59.
 6. *Levifusus trabeatus* Coni, var., 10, 62.
 7. *Sipho erecta*, 13, 65.
 8. *Fusus harrisi*, 12, 64.
 9. *Pisania (Tritonidea) johnsoni*, 13, 65.



EXPLANATION OF PLATE 5

(6)

Fig. 1, 1a.	<i>Leda robusta</i> ,	17, 69.
2.	<i>Leda elongatoides</i> ,	17, 69.
3.	<i>Periploma butleriana</i> ,	19, 71.
4.	<i>Leda lisbonensis</i> ,	17, 69.
5.	<i>Leda semenoides</i> ,	18, 70.
6.	<i>Corbula concha</i> ,	19, 71.
7.	<i>Pecten choctawensis</i> ,	16, 68.
8, 8 a.	<i>Tellina?</i> <i>subtriangularis</i> ,	18, 70.
9, 9 a.	<i>Yoldia corpulentoides</i> ,	18, 70.
10.	<i>Ostrea cretacea</i> Morton,	16, 68.
11.	<i>Pecten clarkeanus</i> ,	16, 68.
12.	<i>Gastrochæna larva</i> Con.,	19, 71.
13.	<i>Modiola alabamensis</i> ,	16, 68.
14.	<i>Lithodomus claibornensis</i> Con.,	17, 69.

